Space Weather Forecast

Issued on Monday, 29 November 2021 at 13:30 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: No Significant Activity Expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was very low, with no significant flares observed. There are three active sunspot regions on the Earth-facing disc. There are two bipolar regions in the southwest, one of which has been declining and another which has gradually increased in size, however both are magnetically simple. A further small unipolar spot is positioned in the northeast disc, and this is also a stable region. There are a number of filaments on the disc and one of these was observed lifting from the southern hemisphere, just east of the Meridian at around 29/0745 UTC. It is possible that the Coronal Mass Ejection (CME) associated with this may have an Earth directed component, but further analysis will be required once coronagraph imagery becomes available. No other Earth-directed CMEs were evident in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed, was at slow levels, varying between 335 and 395 km/s. The Interplanetary Magnetic Field (IMF) strength, declined from moderate to weak levels through the period, and a notable period of negative orientation of the north-south component was observed 28/2130 UTC to 290/0300 UTC. The parameters suggest the declining effects of a CME, possibly followed by connection to a weak coronal hole. Geomagnetic Activity was mainly Quiet to Unsettled (Kp 0-3), but an Active (Kp 4) interval was observed 29/0000-0300 UTC.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain mostly Very Low, with a chance of common class flares, mainly from the more complicated and larger sunspot region in the southwest.

Solar Wind / Geomagnetic Activity: A CME from a filament eruption early on the 26 Nov has been assessed as likely missing, but with low confidence, giving a small chance of some impact at Earth late day 1 or day 2 (29th or 30th). There may also be additional enhancements as Earth encounters the fast winds from various coronal holes. Subsequent Geomagnetic activity is expected to be mostly Quiet with occasional Unsettled spells, but with an ongoing chance of Active intervals, and a very slight chance of Minor Storms on all days.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms observed.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2021. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	5	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2021. All Rights Reserved.